

Reply to Office Action dated June 16, 2008

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A zoom method comprising:
searching a center search line of a photographic screen;
extracting a color average value and a deviation of a photographic object within
the photographic screen for each of an upper line and a lower line of the center search line;
determining a size of photographic object based on the extracted color average
value and the extracted deviation for each of the upper line and the lower line; and
setting a zoom ratio according to ~~a calculated~~ the determined size of the
photographic object.
- 2-3. (Canceled)
4. (Currently Amended) The method of claim ~~[[3]]~~1, wherein ~~calculating~~ determining
the size of the photographic object comprises:
analogizing a size of a photographic object by calculating the average value and
the deviation; and
judging whether the photographic object is a normal region corresponding to a
photographic mode.

5. (Original) The method of claim 4, further comprising converting a digital camera into a user hand mode so that a user can perform a direct zoom processing when the photographic object is not a normal region.

6. (Original) The method of claim 1, wherein searching the center search line comprises:

setting a photographic mode;

preprocessing the photographic screen; and

performing a line scanning at a region of the center search line.

7. (Original) The method of claim 6, wherein preprocessing the photographic screen comprises performing one of a smoothing method and a blurring method for minimizing error generation.

8. (Original) The method of claim 1, wherein the center search line comprises a horizontal axis including an approximate center of the photographic screen and a reference for starting an initial line scanning.

9. (Currently Amended) The method of claim 1, wherein extracting the color average value and ~~[[a]]~~the deviation of the photographic object comprises:

detecting the photographic object by searching the center search line;

searching a ~~predetermined~~ number of upper and lower search lines from the center search line based on the center search line; and

extracting the color average value and the deviation of the photographic object for each of the searched upper search line and the searched lower search line.

10. (Currently Amended) The method of claim 9, wherein searching the ~~predetermined~~ number of upper and lower search lines comprises performing a line-scanning, and searching lines set with a predetermined gap up and down one line by one line.

11. (Currently Amended) The method of claim 9, wherein when the photographic object is not detected, the method further comprises:

resetting the center search line;

resetting upper and lower search lines based on the reset center search line; and

searching the ~~predetermined~~ number of upper and lower search lines based on the reset search line.

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12. (Currently Amended) The method of claim 1, wherein setting the zoom ratio comprises ~~calculating~~determining the zoom ratio by comparing the ~~calculated~~determined size of the photographic object with a reference value.

13. (Original) The method of claim 12, wherein the reference value comprises one of a value manually preset by a user and a value preset based on a screen contrast.

14. (Currently Amended) A zoom method comprising:
searching a ~~predetermined number~~plurality of lines of a photographic screen;
for each of the plurality of lines, extracting a color average value and a deviation of a photographic object on the photographic screen;
~~judging~~determining a size of a photographic object based on the extracted average value and the extracted deviation for each of the plurality of lines;
setting a zoom ratio based on a ~~calculated~~determined size of the photographic object and a reference value; and
applying the set zoom ratio to the photographic object.

15. (Currently Amended) The method of claim 14, further comprising:
setting a center search line of the photographic screen, and wherein the extracting includes performing a line scan of the center search line to extract the color average value and the deviation.

16. (Original) The method of claim 14, further comprising:
preprocessing the photographic screen according to a set photographic mode.
17. (Original) The method of claim 16, wherein the photographic mode comprises one of a portrait mode and a text mode.
18. (Original) The method of claim 16, wherein the preprocessing comprises one of a smoothing method and a blurring method for minimizing error generation.
19. (Currently Amended) The method of claim ~~[[14]]~~15, wherein the center search line comprises a horizontal axis including an approximate center of the photographic screen and a reference for performing a line scan in order to detect the photographic object.
20. (Currently Amended) The method of claim ~~[[14]]~~15, further comprising resetting the center search line when the photographic object is not detected along the center search line, and wherein the extracting includes performing a line scan based on the reset center search line ~~when the photographic object is not detected~~.
21. (Currently Amended) The method of claim 14, wherein searching the ~~predetermined number~~ plurality of lines comprises alternatively searching lines with a predetermined gap up and down one line by one line.

22. (Original) The method of claim 14, further comprising converting into a user hand mode so that a user can perform a direct zoom processing when the photographic object is not a normal region.

23. (Original) The method of claim 14, wherein the reference value comprises one of a value preset manually by a user and a value preset based on a screen contrast.

24. (Currently Amended) A zoom method of a digital camera apparatus associated with a mobile communication terminal, the method comprising:

searching a first search line of a photographic screen to detect a photographic object;

searching an upper and lower search lines line of the first search line to extract at least one of an average value and a deviation of a skin color of the photographic object;

searching a lower search line of the first search line to extract an average value and a deviation of a skin color of the photographic object; and

calculating-determining a size of a face region based on the extracted average value and the extracted deviation of the skin color for the upper search line and based on the extracted average value and the extracted deviation of the skin color for the lower search line.

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25. (Currently Amended) The method of claim 24, further comprising:
comparing the ~~calculated~~ determined size of the face region with a reference value;
and
calculating a zoom ratio based on the ~~comparison~~ comparing.
26. (Original) The method of claim 25, further comprising:
applying the calculated zoom ratio to the photographic screen.
27. (Currently Amended) The method of claim 24, wherein the first search line comprises a center search line positioned approximately at a center of the photographic screen.
28. (Original) The method of claim 24, further comprising resetting a search line and searching the reset search line.
29. (Currently Amended) The method of claim 24, wherein searching the upper search line and the lower search ~~lines~~ line comprises alternatively searching lines set with a predetermined gap up and down one line by one line.

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30. (Currently Amended) The method of claim 24, wherein ~~calculating~~determining the size of the face region comprises:

~~calculating~~determining an area of the face region by obtaining a number of pixels that exist within a range of a certain deviation from ~~an~~the average value of a skin color.

31. (Currently Amended) The method of claim 24, wherein ~~calculating~~determining the size of the face region comprises:

analogizing a length of a longest search line as a face width by obtaining a length variation through search lines having a smaller gap than the upper and lower search lines.

32. (Currently Amended) The method of claim 24, wherein ~~calculating~~determining the size of the face region comprises judging whether a calculated face region is a normal photographic object.

33. (Currently Amended) The method of claim 32, further comprising ~~converted~~converting the digital camera into a user hand mode so that a user can perform a direct zoom processing when the ~~calculated~~determined face region is not a normal photographic object.

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34. (Currently Amended) The method of claim 24, wherein when plural skin colors more than a certain length exist ~~at~~along the first search line and skin colors of a same pattern are detected at adjacent upper and lower search lines, and the method further comprises:

judging that a plurality of photographic objects exist;

extracting an average value and a deviation of a skin color for each photographic object judged to be a face;

~~calculating~~determining an area of a face region by obtaining a number of pixels that exist within a range of a certain deviation from the average value of each skin color; and

zooming a photographic screen with a preset zoom ratio based on the number and ~~[[a]]the determined face size~~area of the photographic ~~object~~ objects.

35. (Currently Amended) A digital camera zoom method for a mobile communication terminal, the method comprising:

searching a center search line of a photographic screen in order to ~~detecting~~detect text;

detecting an average value of a stroke thickness of the text by searching upper and lower search lines of the photographic screen; and

~~calculating~~determining a size of the text based on the detected average value of the stroke thickness of a text.

36. (Original) The method of claim 35, further comprising:
zooming the photographic screen to a maximum degree and enlarging the text.
37. (Currently Amended) The method of claim 35, further comprising:
comparing the ~~calculated~~ determined size of the text with a reference value; and
calculating a zoom ratio based on the ~~comparison~~ comparing.
38. (Original) The method of claim 37, further comprising:
applying the calculated zoom ratio to the photographic screen.